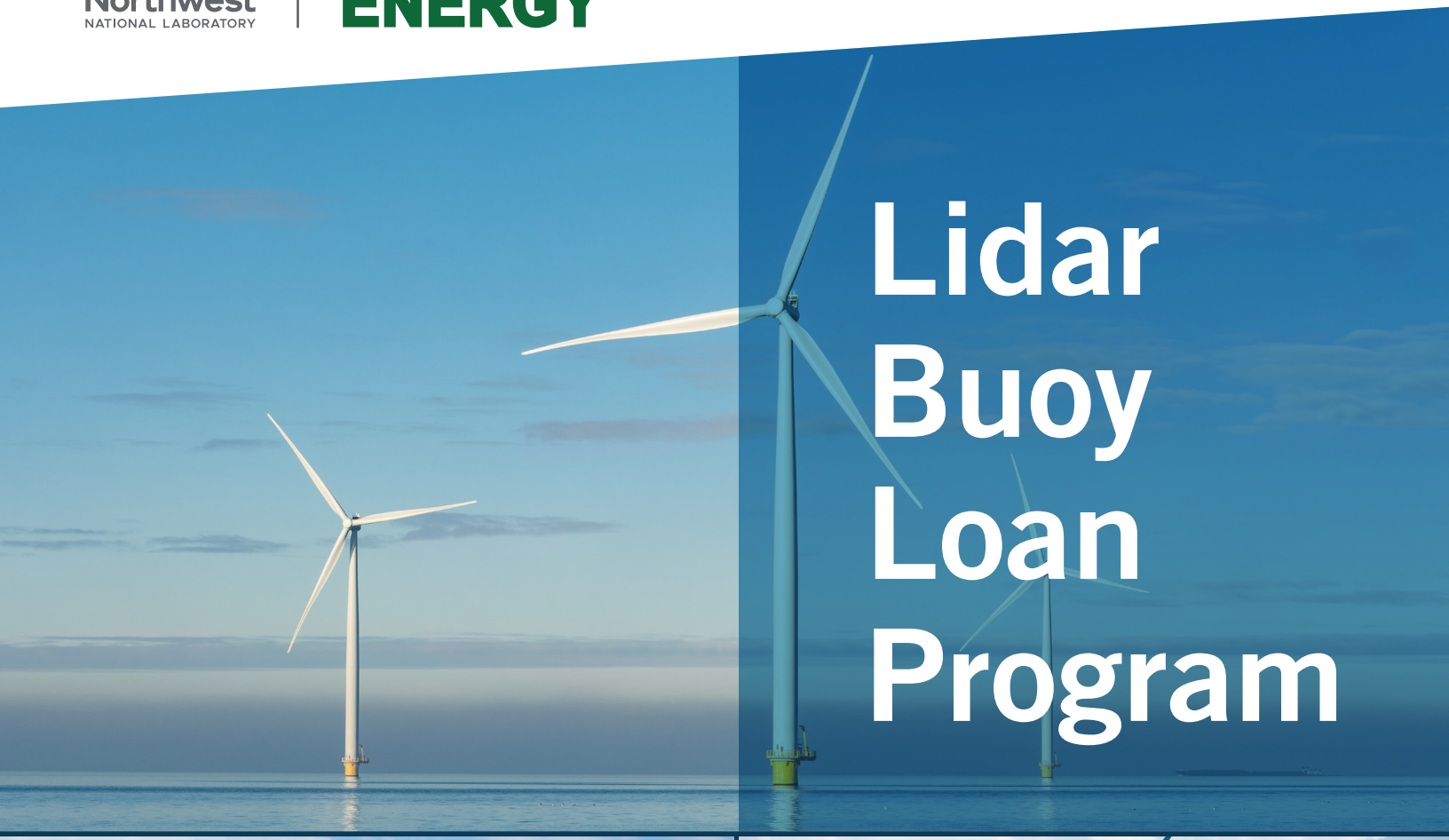
Pacific Northwest NATIONAL LABORATORY | U.S. DEPARTMENT OF ENERGY



Lidar Buoy Loan Program

The lidar buoy loan program represents an opportunity for organizations with an interest in offshore wind energy to work together with the U.S. Department of Energy to provide valuable meteorological and oceanographic data to the offshore community that is needed for offshore wind resource characterization.

The U.S. Department of Energy (DOE) supports development of renewable power generation within the U.S. with increasing emphasis on offshore wind energy. There is currently a lack of long-term wind observations above the ocean surface at wind turbine rotor heights, which are needed to support offshore wind project design and development.

On behalf of DOE, Pacific Northwest National Laboratory (PNNL) oversees the implementation of the lidar buoy loan program and procured two AXYS WindSentinel™ buoys to support offshore wind resource assessments. These buoys are equipped with a host of meteorological and ocean sensors to provide a comprehensive set of meteorological and oceanographic data, including wind profiles from lidar instruments to 200 meters above the surface. The buoys have already begun to fill observational gaps in offshore winds during long-term deployments off the coasts of Virginia and New Jersey. DOE and PNNL will proactively work with interested parties to enable the loan of the lidar buoys.

LOAN PROGRAM OVERVIEW

Qualified parties interested in participating in the loan program are encouraged to prepare applications for consideration by DOE. Applications will be reviewed and scored, and the selected partner will be invited to negotiate loan agreements. Applicants will be required to provide a proposal that addresses three critical areas: (1) pre-qualification, (2) project scope and benefit, and (3) buoy deployment plan.

ABOUT THE BUOYS

The buoys feature a comprehensive set of meteorological and oceanographic measurements needed for offshore wind resource characterization. Key observational capabilities of the buoys include:

- Wind profile
- Near-surface wind speed and direction
- Near-surface air temperature, humidity, and pressure
- Solar radiation
- Waves (significant and maximum wave height, peak period, directional wave spectrum)
- Surface water temperature
- Water velocity profile
- Water temperature and conductivity

These observations are recorded by the buoy's data acquisition system and transmitted via cellular communications (high bandwidth) or by satellite (low bandwidth) to the buoy data archive at PNNL in near-real time.

The data produced by the buoys represent the first publicly available multi-seasonal hub-height data to be collected in U.S. coastal waters. The buoys provide an important new opportunity to characterize the wind resource and other important metocean conditions using observations in regions targeted for offshore wind development.

DATA AND INFORMATION SHARING

The collection and dissemination of buoy data for the benefit of the public and industry is critical to the program. Data collected from the meteorological and ocean sensors will be made available for public access within the A2e Data Archive and Portal (https://a2e.energy.gov/data) and the Lidar Buoy Data Access site (http://offshoreweb.pnnl.gov).

Lidar Buoy Loan Program Objectives

- Collect and disseminate a comprehensive set of meteorological and oceanographic data
- Support offshore wind resource assessment, help validate wind predictions, and improve air-sea interaction understanding
- Reduce uncertainty and risk in characterization of the offshore wind resource in the U.S.

Wind Resource Research Applications

- Validation of wind resource models
- Behavior of wind profile from surface to hub height
- Wave measurements for load modeling
- Subsurface impacts of air-sea interactions

For more information, please contact:

buoyloanprogram@pnnl.gov or visit

https://wind.pnnl.gov/lidarbuoyloanprogram.asp

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